**PSY20016: Social Psychology SP 3, 2020**

# Assignment 2: Research Report (Assessment Weighting: 50%) Climate change and heuristics

***Please note that this handout contains a general description of the study and the reasoning behind it. You must NOT simply copy text from this handout into your Lab Report – to do so will be considered plagiarism and will be treated accordingly.***

# BACKGROUND

Climate change is the most critical environmental concern the world is currently facing. A challenging aspect of climate change is that solutions are difficult to implement due to obstacles from politicians and industry. Acting on climate change is important, given the consequences of not doing so (e.g., Hamilton, 2010). While the level of public support for action related to climate change is increasing, the level of concern expressed by the public is arguably not commensurate with the scope and severity of the problem.

Previous research on attitudes toward climate change has focussed on factors like individual differences (e.g., Yu & Yu, 2017), political ideology (e.g., Whitmarsh, 2011), and perceived risks of climate change. An important factor which has received less attention is the role that the source of a message plays in influencing the public’s trust in the message, and thus attitude change.

The perceived credibility and trust in the source of a persuasive message is argued to be important when it comes to attitude change (Hovland & Weiss, 1951; Pornpitakpan, 2004; Tormala, Briñol, & Petty, 2006). Research has demonstrated that the public is more likely to change their attitude if they feel that the source is trustworthy and credible (that is, they have sufficient expertise in the topic). However, there has been little research focused on understanding *why* a source is trusted. This is despite the acknowledged importance of the role of trust in shaping the publics’ views on issues such as climate change (Malka, et al., 2009).

**This research report is designed to answer the question: Does perceived self-interest of a source (i.e., author) influence the public’s trust in their argument?** More specifically, it will test the idea that when a climate change related message is presented by a source who is perceived to have a vested interest in the message, the message will be trusted less than when climate change related message is being presented by a source who is not seen to have a vested interest in the message. In particular, it will test the idea that the source’s perceived vested interest in the message will activate a heuristic. A lay theory of motivation is a heuristic that allows a person to make a quick judgement call about how much they trust a message based on their determination of the motives of the source (e.g., perceived selfinterest).

The study will also focus on the role of epistemic style in predicting trust in the message.

Epistemic style is an individual difference variable that captures a person’s characteristic way of processing information and making decisions. Within the Epistemic Preference Indicator (Elphinstone, Farrugia, Critchley & Eigenberger, 2014), thinking is differentiated into two epistemic styles – the intellective position, and the default position. The intellective positive (IP) describes a preference for complex and effortful thinking, whereas the default position (DP) describes the use of less effortful thinking styles. The current study will test whether epistemic preference (specifically high IP vs low IP) will moderate the impact of the source’s perceived self-interest on trust in the message. Specifically, it is argued that individuals high in IP are less likely to be influenced by source characteristics (i.e., perceived self-interest of the source) and more influenced by the content of the message. On the other hand, it is expected that individuals low in IP will be less likely to focus on the content of the message and will be more swayed by the characteristics of the source.

**THE CURRENT STUDY Aim:**

The present study has two main aims:

* to investigate whether perceived *self-interest of the source* impacts trust in the message, and whether this effect differs for individuals high in IP vs low in IP and
* to investigate whether trust in the message is related to general concern about climate change, and whether this relationship different for individuals high in IP vs individuals low in IP.

**Design:**

In Week 1, you completed an experimental study. In the study, all participants read an article that discussed the importance of increasing public funding for research and development of electric vehicles. Half of all participants read that the article was written by an engineering researcher employed by GreenFutures. GreenFutures was described as a company focussed on developing technology to improve electric cars. Thus, this represents the *Vested Interest* condition. The other half of participants read that the article was written by an engineering researcher employed by the Australian Coal Association. The Australian Coal Association was described as an industry body who looks after its member companies - the black coal producers in Australia. Thus, this represents the *Non-Vested Interest* condition. Essentially, what was manipulated between the two conditions was the perceived vested interest of the source, and participants were randomly assigned to view one of these two conditions. In addition, participants also completed the Epistemic Preference Indicator Revised (Elphinstone et al. 2014). A median split will be used to create two groups to differentiate people high in IP and low in IP[[1]](#footnote-1)

The study was therefore conducted as a 2 (Vested Interest vs Non-vested interest) x 2 (Epistemic style: High IP vs Low IP) x between-subjects experimental design. The design is between subjects because each respondent only saw one version of the article, and each participant is either high IP or low IP. It is a 2 x 2 design because there are two independent variables, each with two levels: perceived self-interest of the source (Vested Interest vs Nonvested Interest) and Epistemic Style (high IP vs low IP)2. These manipulations created four separate groups, and each participant was in one of the following:

1. Vested Interest; High IP
2. Vested Interest; Low IP
3. Non-vested Interest; High IP
4. Non-vested Interest; Low IP.

**Independent variables:**

*Independent variable 1: Vested Interest.*

We manipulated this variable by telling participants that the article was written by either a research engineer working for GreenFutures (who develop technology to improve electric cars) or a research engineer working for the Australian Coal Association (who represent Australian black coal producers). GreenFutures represents the Vested Interest condition, and the Australian Coal Association represents the Non-vested interest condition.

*Independent variable 2: Epistemic Style*

Participants in this study complete the Epistemic Preference Indicator Revised. We will create the Epistemic Style variable by using a median split of participants’ scores on the Epistemic Preference Indicator Revised. Based on this, participants will either be classified as High IP or Low IP.

**Dependent variables:**

There were two key dependent variables:

*Trust in the message:*

After reading the vignette, participants were asked “After reading the article written by the (GreenFutures / Australian Coal Association) researcher, how much do you trust the information presented in the article?”

*Concern over climate change:*

To gauge level of concern over climate change, participants were asked: “How worried are you about climate change?”

Henceforth, the key variables in this study will be labelled as follows:

**IV\_VestedInterest**: This was an independent variable (manipulated by the experimenter), with two levels: Vested Interest and Non-vested Interest,

**IV\_IP**: This was an independent variable (measured / created by the experimenter), with two levels: High IP and Low IP

2 Strictly, this is not an Independent Variable, as the variable was created using a median split (it’s not possible to randomly allocate people to epistemic style groups). For the purpose of this lab report, to simplify things, it will be referred to as an

IV

**DV\_Trust:** This was a dependent variable (measured), indicating participants’ trust in the message

**DV\_Concern:** This was a dependent variable (measured), indicating participants’ general concern over climate change

# KEY QUESTIONS OF THIS RESEARCH REPORT

In this research report, you will be asking several research questions, outlined below.

The first thing you will need to do is construct hypotheses that reflect these questions. They are *what you think the answers to the above questions will be,* as shown by the data. You should review the trust literature, and from that literature, you will logically derive predictions about what we will find in this study in relation to the four Research Questions outlined below. ***Remember, when stating your hypotheses, you need to specify the direction of any main effects, interaction effects, or correlations.***

**Research Question 1: Does perceived self-interest of a source affect trust in the message?**

*Previous research has found that sources with a vested interest in the argument are trusted less than sources who do not have a vested interest in the argument.*

*i.e.,* **IV\_VestedInterest**→**DV\_Trust**

*To test your hypothesis, you will conduct a t-test.*

**Research Question 2: Does the effect of vested interest on trust in the message depend on Epistemic preference?**

*This question addresses whether the impact of perceived vested interest of the source is the same for individuals low versus high in IP.*

*i.e., Compare*

**IV\_VestedInterest**→**DV\_Trust** *for High IP with*

**IV\_VestedInterest**→**DV\_Trust** *for Low IP*

*To test your hypothesis, you will split the data file according to* **IV\_IP***, and conduct ttests.*

**Research Question 4: Does the relationship between perceptions of trust in the message and concern over climate change depend on Epistemic Preference?**

*This question addresses whether epistemic preference strengthens or weakens the relationship between trust in the message and general concern over climate change.*

*i.e., Compare*

*Correlation between* **DV\_Trust** *and* **DV\_Concern** *for High IP with*

*Correlation between* **DV\_Trust** *and* **DV\_Concern** *for Low IP*

*To test your hypothesis, you will split the data file according to* **IV\_IP***, and run correlations.*

# ANALYSES TO TEST YOUR HYPOTHESES

By the end of Week 4 of semester, you will be given a data set that you will analyse to test your hypotheses. At that time, you will also be given a Data Analysis Handout, to guide you in conducting your analyses.

A Statistics Help tutorial will be held in Week 6 of semester, to answer questions you might have once you have conducted your analyses.

You will need to conduct statistical analyses to:

* Describe the standard demographic characteristics of your sample (gender, age, ethnicity, and any other relevant characteristics that were measured)
* Test your hypotheses. All three hypotheses can be testing using t-tests and correlations.

Detailed notes on how to conduct and interpret these analyses will be provided in the Data Analysis Handout, which will be released to you at the same time as the data that you will analyse.

For more information about the measures in this study, you should refer to the document called “PSY20016\_Sem 2 2020\_Questionnaire Labelled”, which is provided for you on Canvas. This document contains extensive information about vignette and the items in the questionnaire, as well as information about how those items are combined for the analyses that you will conduct.

# INSTRUCTIONS FOR WRITING UP THE RESEARCH REPORT

The report is worth 50% of your final grade in the unit, and will be marked out of 100. The breakdown of marks (out of 100) is given below.

**Introduction (26 marks):** A useful format for the Introduction is to structure it in terms of the following (major) sections: (1) Describe the ‘real world’ problem - What is the applied or practical significance of the research? e.g., Why is research on trust important? (2) The scientific or theoretical problem: What has and has not been done in previous research on this topic? What are the limitations of past research in this area? What is the ‘gap’ in knowledge we are seeking to address in the current research? Key concepts (e.g., heuristics, self-interest bias, epistemic preference) should be clearly defined and explained. (3) State the aims/research questions and hypotheses of the study. Most of the intellectual energy that goes into this report should be directed towards the theoretical and empirical rationale provided for the hypotheses. Formulate hypotheses that reflect the study aims. Justify hypotheses by tying them to related research so they flow smoothly and directly from the literature.

**Method** **(8 marks)**: Include subheadings for Design, Participants, and Materials/Measures and Procedure. The Design section should describe the 2 x 2 between-groups experimental design. The dependent variable(s) should also be specified. The Participants section should describe the nature of the individuals who participated in the research.

NOTE: The ***Materials/Measures and Procedure*** section will be provided for you. You need to include this in your report but you do not need to paraphrase it. You can cut and paste the provided text directly into your report. This section will NOT be marked, but it does count in the word count.

**Results (16 marks):** This report is not a test of your statistical knowledge and you will be given data analysis guidelines to assist you later in the semester. The statistics should be used as a tool to demonstrate whether or not the expected theoretical relationships are supported. You will be expected to present the results in correctly formatted text, tables or figures, as appropriate. The data file will be available on Canvas in Week 4, and Statistics Help tutorials will be held in Week 6. While you wait for the data, it is recommended that you read all the essential references, and start to have a clear idea of what arguments you are going to make.

**Discussion (26 marks)**: Discuss the findings in relation to the aims and hypotheses and literature cited in your Introduction. Were your hypotheses supported? If so, what evidence is there that the results are reflecting “true” relationships versus methodological factors? If they were not supported, discuss possible reasons for this. Discuss limitations of the study (these should be tied directly to the results) and provide suggestions for future research. Provide conclusions relating to the impact of perceived self-interest of the source on trust in the message and how epistemic preference impacts this.

Your report should also include a **Title Page**, **Abstract**, and **References.** The Abstract (6 marks) should be no more than 150 words in length. Marks will also be awarded for overall **integration** (8 marks) and **references and presentation** (10 marks). The references you have been given should be sufficient to begin your literature review. However, you should explore the relevant literature further and include additional references in your report.

# SUBMISSION REQUIREMENTS

The Research Report should be a maximum of 2700 words, with +/- 10% flexibility on the word count. This word limit does NOT include Title page, Abstract, Tables, Figures, or References. As an approximate guide, use the following: Abstract (150 words), Introduction

(approx. 1000 words), Method and Results (approx. 970 words combined), Discussion (approx. 1000 words). (Note that this guide **already includes** your 10% buffer on the word count, so do not go over this limit.)

Your assignment should be typed and double-spaced using a standard 12 point font. Use APA formatting throughout, including for Tables and Figures. You may place your tables and figures within the Results section (i.e., no need to use the manuscript submission convention of placing tables at the end of the article). Do not attach the materials, questionnaire or SPSS printouts of your results to your Research Report. As your formatting guide, refer to the APA Publication Manual.

**Your assignment must be submitted as a single document, via Canvas, no later than 11:55pm on Sunday November 1.**

Your assignmentwill be submitted through Canvas. Well in advance of your submission, you must check that your assignment submission has correctly uploaded, in an acceptable file format. **Allow plenty of time to correct any technical difficulties, as they will not be considered the basis for any extension.**

As per the unit outline, a penalty of 10% of your earned mark per day (excluding weekends) applies for late submissions, and submissions more than 5 days late will receive zero marks. Late penalties begin to accrue **as soon as the deadline has passed**.

Extensions may be granted in exceptional circumstances. Refer to the Unit Outline (pp.8-9) for the process you must follow to apply for an extension. Remember that pressure of other work (whether university work or paid work) does not count as a basis for an extension. Also, you should not assume that an extension will be granted until you are notified of its approval.

# READING LIST

**Essential Reading:**

Elphinstone, B., Farrugia, M., Critchley, C., & Eigenberger, M. (2014). Examining the measurement of Epistemic Style: The development and validation of the Epistemic Preference Indicator-Revised. Personality and Individual Differences, 58, 101-105

Malka, A., Krosnick, J.A., & Langer, G. (2009) The association of knowledge with concern about global warming: trusted information sources shape public thinking. Risk Analysis, 29, 633–647.

Miller, D. T. (1999) The norm of self interest. American Psychologist, 54: 1053-1060.

Petty, R.E., Fleming, M.A., Priester, J.R., & Feinsteing, A.H. (2001) Individual versus group interest violation: surprise as a determinant of argument scrutiny and persuasion. Social Cognition, 19, 418-442.

Pornpitakpan, C. (2004). The persuasiveness of source credibility: A critical review of five decades’ evidence. Journal of Applied Social Psychology, 34, 243–281.

Reimer, T., Mata, R., & Stoecklin, M. (2004) The use of heuristics in persuasion: deriving cues on source expertise from argument quality. Current Research in Social Psychology, 10, http://www.uiowa.edu/~grpproc/crisp/crisp.10.6.html (accessed, 01/08/2010).

Tormala, Z.L., Briñol, P., & Petty, R.E. (2006) When credibility attacks: The reverse impact of source credibility on persuasion. Journal of Experimental Social Psychology, 42, 684–691.

**Further Reading:**

Hamilton, C. (2010). Requiem for a Species: Why we resist the truth about climate change. Crows Nest, Australia: Allen & Unwin.

Hovland, C. I., & Weiss, W. (1951). The influence of source credibility on communication effectiveness. Public Opinion Quarterly, 15, 635–650. https://doi.org/10.1086/266350

Yu, T., & Yu, T. (2017). The Moderating Effects of Students’ Personality Traits on ProEnvironmental Behavioral Intentions in Response to Climate Change. International Journal of Environmental Research and Public Health, 14, 1472

Whitmarsh (2011). Scepticism and uncertainty about climate change: Dimensions, determinants and change over time. Global Environmental Change, 21, 690-700

***Below is a description of the materials/measures and procedure of the study. You may copy and paste this description into your Lab Report. You do not need to paraphrase or alter it in any way.***

**Materials/Measures and Procedure**

Participants undertook the experiment, via the Qualtrics survey platform. Participants were directed to the study link, where they first viewed a brief description of the study and offered informed consent. (Any students who did not wish to participate in the study and did not provide consent were directed to the debriefing.)

Participants who consented to take part read a modified version of an article (the original version is available here: <https://www.forbes.com/sites/davekeating/2020/05/19/it-turns-out-covid-isnt-helping-the-climate/#11690412273e>). Half of the participants were told that it was written by an engineering researcher employed by GreenFutures (a company focussed on developing technology to improve electric cars). The other half of the participants read that the article was written by an engineering researcher employed by the Australian Coal Association (an industry body who looks after its member companies - the black coal producers in Australia). Following the article, participants were asked to rate their trust in the information presented in the article. They then completed a series of attention checks and manipulation checks. These were included to determine if the participant had properly read the article and registered the information about manipulations. Following the attention and manipulation checks, participants completed demographic questions (gender, age, ethnic background, and political orientation), and also the Epistemic Preference Scale Revised (Elphinstone et al. 2014), an environmental concern scale (Schultz, 2001), and modified version of the 15 item climate change concern scale from Maibach et al. (2011). The modification involved changing the United States to Australia in survey items. Following completion of the survey, participants were presented with a debriefing statement explaining the aims of the study and reason for the very slight deception (i.e., the author and immediacy manipulations).

**Additional notes about procedure (for information only. Do not include this in your report)**

Additional independent variable/conditions:

As you read through the Debriefing, as well as the document called PSY20016\_Sem 2 2019\_Questionnaire Labelled, you will have seen that we manipulated immediacy of the climate crisis, with the intention of analysing this variable as a predictor variable (akin to an independent variable).

While this is a variable of interest in the overall design of the broader research project, it is **not** a variable we are considering in your lab report. So, for your purposes, ignore the immediacy variable. Do not mention it in your lab report as being part of the present study.

Additional dependent variables:

As you read through the document called PSY20016\_Sem 2 2020\_Questionnaire Labelled, you will also have seen that there were several additional variables that were measured, which we are not asking you to consider in your lab report (e.g., environmental concern scale). You should ignore these; do not mention them in your lab report. The only variables you need to describe are those central to our study – i.e., the variables outlined in your assignment handout and data analysis guidelines, and highlighted yellow in the document called PSY20016\_Sem 2 2020\_Questionnaire Labelled.

**Project Title: Climate change and heuristics**

**Debriefing Statement**  
Thank you for your participation! The study you just completed was designed to investigate the impact of heuristics on trust judgements. Specifically, the study was interested in the degree to which the perceived self-interest of the source impacts upon trust in the message. We were also interested in the extent to which perceptions of immediacy of the climate crisis impact upon trust in the source.

In the present study, you read a modified version of an article (the original version is available here: <https://www.forbes.com/sites/davekeating/2020/05/19/it-turns-out-covid-isnt-helping-the-climate/#11690412273e> The article discussed the benefits of investing public money in developing electric vehicles

Half of you were told that this article was written by an engineering researcher employed by GreenFutures (a company focussed on developing technology to improve electric cars). This was the vested interest condition. The other half of you read that the article was written by an engineering researcher employed by the Australian Coal Association (an industry body who looks after its member companies - the black coal producers in Australia). This was the non-vested interest condition. In reality, the article was written by neither. The information about the author was manipulated in this study in order to determine whether perceived self-interest of the source (author) impacted on trust in the message. It has been argued that when a source is perceived to have a vested interest in the message, then people trust the message less.

In addition, half of you read that we are likely to see a 1.5 degree rise in average temperature by 2050, whereas the other half of you read that we are likely to see a 1.5 degree rise by 2100. This was done to see if perceptions of immediacy of the climate crisis impacted upon trust in the message.

Following the article, you were asked to complete a series of attention and manipulation checks. These were included to determine if you had properly read the article and registered the information we gave you about the manipulations. Following the attention and manipulation checks, you completed demographic questions (gender, age, ethnic background, and political orientation), and also the Epistemic Preference Scale Revised, an environmental concern scale, and a 15-item scale asking about your degree of concern about climate change. Finally, you were asked if concern over climate change had impacted your voting behaviour.

In the event that you experience any psychological distress or discomfort as a result of your participation, you may wish to contact Lifeline on 13 11 14 or Suicide Help Line on 1300 651 251 (both free calls and available 24 hours a day, 7 days a week) for further support.

If you have any additional questions, please feel free to contact Dr. James Williams at jwilliams@swin.edu.au.

Thank you again for your participation and assistance with our research.

1. Note that the study in which you participated actually included additional variables which will be outlined in the debriefing statement. However, for the purpose of this lab report, you can ignore these. [↑](#footnote-ref-1)